

Grade 1

## Louisiana Student Standards: Companion Document for Teachers 2.0

This document is designed to assist educators in interpreting and implementing the Louisiana Student Standards for Mathematics. Found here are descriptions of each standard which answer questions about the standard's meaning and application to student understanding. Also included are the intended level of rigor and coherence links to prerequisite and corequisite standards. Examples are samples only and should not be considered an exhaustive list.

Additional information on the Louisiana Student Standards for Mathematics, including how to read the standards' codes, a listing of standards for each grade or course, and links to additional resources, is available on the Louisiana Department of Education [K-12 Math Planning Page](#). Please direct any questions to [STEM@la.gov](mailto:STEM@la.gov).

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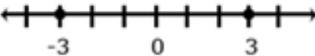
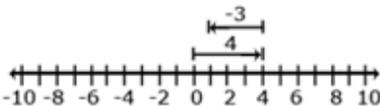
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How-to-Read Guide

The diagram below provides an overview of the information found in all companion documents. Definitions and more complete descriptions are provided on the next page.

Domain Name and Abbreviation	Cluster Letter and Description
<p><b>The Number System (NS)</b></p> <p><b>A. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</b></p> <p>In this cluster, the terms students should learn to use with increasing precision are <b>rational numbers, integers, and additive inverse.</b></p> <p><b>7.NS.A.1</b> Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <p>a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</p> <p>b. Understand <math>p + q</math> as the number located a distance <math> q </math> from <math>p</math>, in the positive or negative direction depending on whether <math>q</math> is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p> <p>c. Understand subtraction of rational numbers as adding the additive inverse, <math>p - q = p + (-q)</math>. Show that the distance between two rational numbers on the number line is the absolute value of their</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding(1,1a, 1b, 1c, 1d), Procedural Skill and Fluency (1, 1d)</p> <p><b>Remediation - Previous Grade(s) Standard:</b> <a href="#">5.NF.A.1</a>, <a href="#">6.NS.C.5</a></p> <p><b>7<sup>th</sup> Grade Standard Taught in Advance:</b> none</p> <p><b>7<sup>th</sup> Grade Standard Taught Concurrently:</b> none</p> <p>Students add and subtract rational numbers. Visual representations may be helpful as students begin this work: they become less necessary as students become more fluent with these operations. In sixth grade, students found the distance of horizontal and vertical segments on the coordinate plane. In seventh grade, students build on this understanding to recognize subtraction is finding the distance between two numbers on a number line. This standard allows for adding and subtracting of negative fractions and decimals and interpreting solutions in given context.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>Have students substitute rational numbers for <math>p</math> and <math>q</math> and use a number line to find <math>p - q</math> and <math>p + (-q)</math>, repeating this multiple times with different numbers. Students should see a pattern that they end up at the same point on the number line. Inductively, students should conclude that <math>p - q = p + (-q)</math>.</li> <li>-3 and 3 are shown to be opposites on the number line because they are equal distance from zero and therefore have the same absolute value and the sum of the number and its opposite is zero.</li> </ul>  <ul style="list-style-type: none"> <li><math>4 + (-3) = 1</math> or <math>(-3) + 4 = 1</math></li> </ul>  <ul style="list-style-type: none"> <li>Use a number line to add <math>-5\frac{1}{2} + 7</math>.</li> <li>Use a number line to subtract: <math>-6 - (-\frac{2}{3})</math></li> </ul>

**Text of the standard**      ★ **Shading of Standard Codes:** ■ Major Work, ■ Supporting Work, ○ Additional Work

**Component(s) of Rigor**

**Prior grade(s) standards. Click hyperlink to access standard's text.**

**Current grade standards taught prior to or with this standard**

**Information and samples to exemplify the standard.**

1. **Domain Name and Abbreviation:** A grouping of standards consisting of related content that are further divided into clusters. Each domain has a unique abbreviation and is provided in parentheses beside the domain name.
2. **Cluster Letter and Description:** Each cluster within a domain begins with a letter. The description provides a general overview of the focus of the standards in the cluster.
3. **Previous Grade(s) Standards:** One or more standards that students should have mastered in previous grades to prepare them for the current grade standard. If students lack the pre-requisite knowledge and remediation is required, the previous grade standards provide a starting point.
4. **Standards Taught in Advance:** These current grade standards include skills or concepts on which the target standard is built. These standards are best taught before the target standard.
5. **Standards Taught Concurrently:** Standards which should be taught with the target standard to provide coherence and connectedness in instruction.
6. **Component(s) of Rigor:** See full explanation on [components of rigor](#).
7. **Sample Problem:** The sample provides an example how a student might meet the requirements of the standard. Multiple examples are provided for some standards. However, sample problems should not be considered an exhaustive list. Explanations, when appropriate, are also included.
8. **Text of Standard:** The complete text of the targeted Louisiana Student Standards of Mathematics is provided.

### Classification of Major, Supporting, and Additional Work

Students should spend the large majority of their time on the **major work** of the grade. **Supporting work** and, where appropriate, **additional work** can engage students in the major work of the grade. Each standard is color-coded to quickly and simply determine how class time should be allocated. Furthermore, standards from previous grades that provide foundational skills for current grade standards are also color-coded to show whether those standards are classified as **major**, **supporting**, or **additional** in their respective grades.

### Components of Rigor

The K-12 mathematics standards lay the foundation that allows students to become mathematically proficient by focusing on conceptual understanding, procedural skill and fluency, and application.

**Conceptual Understanding** refers to understanding mathematical concepts, operations, and relations. It is more than knowing isolated facts and methods. Students should be able to make sense of why a mathematical idea is important and the kinds of contexts in which it is useful. It also allows students to connect prior knowledge to new ideas and concepts.

**Procedural Skill and Fluency** is the ability to apply procedures accurately, efficiently, and flexibly. It requires speed and accuracy in calculation while giving students opportunities to practice basic skills. Students' ability to solve more complex application tasks is dependent on procedural skill and fluency.

**Application** provides a valuable content for learning and the opportunity to solve problems in a relevant and a meaningful way. It is through real-world application that students learn to select an efficient method to find a solution, determine whether the solution makes sense by reasoning, and develop critical thinking skills.

**Standards for Mathematical Practice**

The Louisiana Standards for Mathematical Practice are expected to be integrated into every mathematics lesson for all students in grades K-12. Below are a few examples of how these practices may be integrated into tasks students in grade 1 complete.

<b>Louisiana Standards for Mathematical Practice (MP)</b>	
<b>Louisiana Standard</b>	<b>Explanations and Examples</b>
<b>1.MP.1</b> Make sense of problems and persevere in solving them.	In first grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” They are willing to try other approaches when having difficulty in solving a problem.
<b>1.MP.2</b> Reason abstractly and quantitatively.	Younger students recognize that a number represents a specific quantity. They connect the quantity to written symbols. Using reasoning with numbers requires creating a representation of a problem while focusing on the meaning of quantities.
<b>1.MP.3</b> Construct viable arguments and critique the reasoning of others.	First graders construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also practice their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” “Explain your thinking,” and “Why is that true?” They not only explain their own thinking, but listen to others’ explanations. They decide if the explanations make sense and ask questions.
<b>1.MP.4</b> Model with mathematics.	In early grades, students experiment with representing problem situations in multiple ways, including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.
<b>1.MP.5</b> Use appropriate tools strategically.	In first grade, students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, first graders decide it might be best to use colored chips to model an addition problem.
<b>1.MP.6</b> Attend to precision.	As young children begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and when they explain their own reasoning.
<b>1.MP.7</b> Look for and make use of structure.	First graders begin to discern a pattern or structure. For instance, if students recognize $12 + 3 = 15$ , then they also know $3 + 12 = 15$ (Commutative property of addition). To add $4 + 6 + 4$ , the first two numbers can be added to make a ten, so $4 + 6 + 4 = 10 + 4 = 14$ .
<b>1.MP.8</b> Look for and express regularity in repeated reasoning.	In the early grades, students notice repetitive actions in counting and computation, etc. When children have multiple opportunities to add and subtract “ten” and multiples of “ten” they notice the pattern and gain a better understanding of place value. Students continually check their work by asking themselves, “Does this make sense?”

**Operations and Algebraic Thinking (OA)**

**A. Represent and solve problems involving addition and subtraction.**

In this cluster, the terms students should learn to use with increasing precision are **add, adding to, taking from, putting together, taking apart, comparing, unknown, total, less than, equal to, minus, subtract, the same amount as, and** (to describe (+) symbol), **counting on, making ten, doubles, and equation.**

**Notes on vocabulary:**

1. While some standards use the term “sum,” the term “total” is used in the student examples. “Sum” sounds the same as “some,” but has the opposite meaning. “Some” is used to describe problem situations with one or both addends unknown, so it is better in the earlier grades to use “total” rather than “sum.” Formal vocabulary for subtraction (“minuend” and “subtrahend”) is not needed for kindergarten, grade 1, and grade 2, and may inhibit students seeing and discussing relationships between addition and subtraction. At these grades, the recommendation is to use the terms “total” and “addend” as they are sufficient for classroom discussion. Note that is recommendation does not prohibit students from learning the term “sum” in grade 1; however, teachers will need to be aware of the misconceptions that its use may create.
2. Subtraction names a missing part. Therefore, the minus sign should be read as “minus” or “subtract” but not as “take away.” Although “take away” has been a typical way to define subtraction, it is a narrow and incorrect definition. (\*Fosnot & Dolk, 2001; Van de Walle & Lovin, 2006)

Louisiana Standard	Explanations and Examples
<p><b>1.OA.A.1</b> Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p>Table 1* found in the Louisiana Student Standards for Mathematics has been added to the end of this document.</p>	<p><b>Component(s) of Rigor:</b> Application  <b>Remediation - Previous Grade(s) Standard:</b> <a href="#">K.OA.A.2</a>  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> <a href="#">1.OA.C.6</a>, <a href="#">1.OA.D.8</a></p> <p>Contextual problems that are closely connected to students’ lives should be used. Table 1* describes the four different addition and subtraction situations and their relationship to the position of the unknown. First-grade students should have experiences with <b>all</b> problem situations in Table 1. Students use objects, drawings, and numbers to represent the different situations.</p> <ul style="list-style-type: none"> <li>• <i>Take From</i> example: Abel has 9 apples. He gave 3 to Susan. How many apples does Abel have now? (A student will start with 9 objects and then remove 3.)</li> <li>• <i>Compare</i> example: Abel has 9 apples. Susan has 3 apples. How many more apples does Abel have than Susan? (A student will use 9 objects to represent Abel’s 9 apples and 3 objects to represent Susan’s 3 apples. Then they will compare the 2 sets of objects.)</li> </ul> <p>Note that even though the modeling of the two problems above is different, the equation, <math>9 - 3 = ?</math>, can represent both situations yet the compare example can also be represented by <math>3 + ? = 9</math> (How many more do I need to make 9?). Students who understand this relationship have mastered 1.OA.B.4.</p> <p>It is important to attend to the difficulty level of the problem situations in relation to the position of the unknown.</p> <ul style="list-style-type: none"> <li>• <i>Result Unknown, Total Unknown, and Both Addends Unknown</i> problems are the least complex for students.</li> <li>• The next level of difficulty includes <i>Change Unknown, Addend Unknown, and Difference Unknown</i>.</li> <li>• The most difficult are <i>Start Unknown</i> and versions of <i>Bigger and Smaller Unknown</i> (compare problems).</li> </ul>

**1.OA.A.2** Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

**Component(s) of Rigor:** Application

**Remediation - Previous Grade(s) Standard:** none

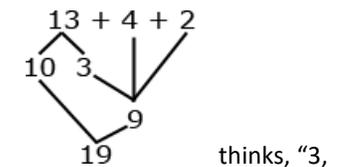
**1<sup>st</sup> Grade Standard Taught in Advance:** [1.OA.A.1](#)

**1<sup>st</sup> Grade Standard Taught Concurrently:** none

Students solve word problems using properties of operations and counting strategies to find the sum of three whole numbers:

Anna went to the store and bought 7 apples, 6 bananas, and 4 peaches. How many total pieces of fruit did Anna buy?

- Making tens (e.g.,  $7 + 6 + 4 = 4 + 6 + 7 = 10 + 7 = 17$ )
- Using doubles and near doubles (doubles plus 1, minus 1)  
e.g.,  $7 + 6 + 4$ ; student thinks  $7 + 6 = 6 + 6 + 1 = 12 + 1 = 13$ ;  $13 + 4 = 17$
- Decomposing numbers between 10 and 20 into tens and ones helps reinforce place value understanding
- Counting on and counting on again (e.g., to add  $3 + 2 + 4$  a student writes  $3 + 2 + 4 = ?$  and 4, 5, that's 2 more, 6, 7, 8, 9 that's 4 more so  $3 + 2 + 4 = 9$ .)
- Using "plus 10, minus 1" to add 9 (e.g.,  $3 + 9 + 6$  A student thinks, "9 is close to 10 so I am going to add 10 plus 3 plus 6 which gives me 19. Since I added 1 too many, I need to take 1 away so the answer is 18.)



**Operations and Algebraic Thinking (OA)**

**B. Understand and apply properties of operations and the relationship between addition and subtraction.**

In this cluster, the terms students should learn to use with increasing precision are **add, subtract, unknown addend, order, first, second**

Louisiana Standard	Explanations and Examples
<p><b>1.OA.B.3</b> Apply properties* of operations to add and subtract. <i>Examples: If <math>8 + 3 = 11</math> is known, then <math>3 + 8 = 11</math> is also known. (Commutative property of addition.) To add <math>2 + 6 + 4</math>, the second two numbers can be added to make a ten, so <math>2 + 6 + 4 = 2 + 10 = 12</math>. (Associative property of addition.)</i></p> <p>*Students need not use formal terms for these properties.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding  <b>Remediation - Previous Grade(s) Standard:</b> none  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> <a href="#">1.OA.B.4</a></p> <p>Students should understand the important ideas of the following properties:</p> <ul style="list-style-type: none"> <li>• Identity property of addition (e.g., <math>6 = 6 + 0</math>)</li> <li>• Identity property of subtraction (e.g., <math>9 - 0 = 9</math>)</li> <li>• Commutative property of addition (e.g., <math>4 + 5 = 5 + 4</math>)</li> <li>• Associative property of addition (e.g., <math>3 + 9 + 1 = 3 + 10</math>)</li> </ul> <p>Students need several experiences investigating whether the commutative property works with subtraction. The intent is not for students to experiment with negative numbers but only to recognize that taking 5 from 8 is not the same as taking 8 from 5. Students should recognize that they will be working with numbers later on that will allow them to subtract larger numbers from smaller numbers. However, in first grade we do not work with negative numbers.</p>
<p><b>1.OA.B.4</b> Understand subtraction as an unknown-addend problem. <i>For example, subtract <math>10 - 8</math> by finding the number that makes 10 when added to 8.</i></p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding  <b>Remediation - Previous Grade(s) Standard:</b> none  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> <a href="#">1.OA.B.3</a></p> <p>When determining the answer to a subtraction problem, <math>12 - 5</math>, students should think, "If I have 5, how many more do I need to make 12?" Encouraging students to record this symbolically, <math>5 + ? = 12</math>, will develop their understanding of the relationship between addition and subtraction. Some strategies they may use are counting objects, creating drawings, counting up, using number lines or 10 frames to determine an answer. The meaning of subtraction as an unknown-addend addition problem is one of the essential understandings middle school students will need in order to extend arithmetic to negative rational numbers.</p> <p>Continued work with Table 1 problems (found at the end of this document) will help develop these understandings.</p>

**Operations and Algebraic Thinking (OA)**

**C. Add and subtract within 20.**

In this cluster, the terms students should learn to use with increasing precision are **addition, putting together, adding to, making ten, subtraction, taking apart, taking from, equivalent, unknown, equal, equation, counting all, counting on, and counting back.**

Louisiana Standard	Explanations and Examples
<p><b>1.OA.C.5</b> Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding  <b>Remediation - Previous Grade(s) Standard:</b> none  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <p>Students may need help connecting 'counting on' with addition and 'counting back' with subtraction. When students count on 3 from 4, (5, 6, 7) they should write this as <math>4 + 3 = 7</math>. When students count back (3) from 7, (6, 5, 4) they should connect this to <math>7 - 3 = 4</math>. Students often have difficulty knowing <b>where</b> to begin their count when counting backward.</p>
<p><b>1.OA.C.6</b> Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., <math>8 + 6 = 8 + 2 + 4 = 10 + 4 = 14</math>); decomposing a number leading to a ten (e.g., <math>13 - 4 = 13 - 3 - 1 = 10 - 1 = 9</math>); using the relationship between addition and subtraction (e.g., knowing that <math>8 + 4 = 12</math>, one knows <math>12 - 8 = 4</math>); and creating equivalent but easier or known sums (e.g., adding <math>6 + 7</math> by creating the known equivalent <math>6 + 6 + 1 = 12 + 1 = 13</math>).</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding, Procedural Skill and Fluency  <b>Remediation - Previous Grade(s) Standard:</b> <a href="#">K.OA.A.2</a>, <a href="#">K.OA.A.3</a>, <a href="#">K.OA.A.4</a>, <a href="#">K.OA.A.5</a>  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> <a href="#">1.OA.B.3</a>, <a href="#">1.OA.B.4</a>, <a href="#">1.OA.B.5</a>  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> <a href="#">1.OA.A.1</a></p> <p>This standard is strongly connected to all the standards in this domain. In First Grade, students learn about and use various strategies to solve addition and subtraction problems. The use of objects, diagrams, or interactive whiteboards and various strategies will help students develop fluency.</p> <p>When students repeatedly use strategies that make sense to them, they internalize facts and develop fluency for addition and subtraction within 10. Once students are able to demonstrate fluency within 10, they are accurate, efficient, and flexible. First Grade students then apply similar strategies for solving problems within 20, building the foundation for fluency to 20 in grade 2.</p> <p>While not specifically included as a strategy in this standard, use of doubles is noted as a strategy in 1.OA.A.2 and implied in the last example in this standard (i.e., adding <math>6 + 7</math> by creating the known equivalent <math>6 + 6 + 1 = 12 + 1 = 13</math>).</p>

Operations and Algebraic Thinking (OA)																
D. Work with addition and subtraction equations.																
In this cluster, the terms students should learn to use with increasing precision are <b>equations, equal, the same amount/quantity as, true, false, addition, putting together, adding to, counting on, making ten, subtract, taking apart, taking from, and unknown.</b>																
Louisiana Standard	Explanations and Examples															
<p><b>1.OA.D.7</b> Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. <i>For example, which of the following equations are true and which are false? <math>6 = 6</math>, <math>7 = 8 - 1</math>, <math>5 + 2 = 2 + 5</math>, <math>4 + 1 = 5 + 2</math>.</i></p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding, Procedural Skill and Fluency  <b>Remediation - Previous Grade(s) Standard:</b> none  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <p>In order to determine whether an equation is true or false, grade 1 students must first understand the meaning of the equal sign. This is developed as students in Kindergarten and First Grade solve numerous joining and separating situations with mathematical tools, rather than symbols. Once the concepts of joining, separating, and "the same amount as" are developed concretely, grade 1 students are ready to connect these experiences to the corresponding symbols (+, -, =). Thus, students learn that the equal sign does not mean "the answer comes next", but that the symbol signifies an equivalent relationship that the left side 'has the same value as' the right side of the equation.</p> <p>When students understand that an equation needs to "balance," with equal quantities on both sides of the equal sign, they understand various representations of equations, such as:</p> <ul style="list-style-type: none"> <li>• an operation on the left side of the equal sign and the answer on the right side (<math>5 + 8 = 13</math>)</li> <li>• an operation on the right side of the equal sign and the answer on the left side (<math>13 = 5 + 8</math>)</li> <li>• numbers on both sides of the equal sign (<math>6 = 6</math>)</li> <li>• operations on both sides of the equal sign (<math>5 + 2 = 4 + 3</math>).</li> </ul> <p>Once students understand the meaning of the equal sign, they are able to determine if an equation is true (<math>9 = 9</math>) or false (<math>9 = 8</math>). These key skills are hierarchical in nature and need to be developed over time. Experiences determining if equations are true or false help students develop these skills. Initially, students develop an understanding of the meaning of equality using models. However, the goal is for students to reason at a more abstract level. At all times students should justify their answers, make conjectures (e.g., if you add a number and then subtract that same number, you get the original number that you started with), and make estimations. Examples of true and false statements:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">• <math>7 = 8 - 1</math></td> <td style="width: 33%;">• <math>6 - 1 = 1 - 6</math></td> <td style="width: 33%;">• <math>3 + 4 + 5 = 7 + 5</math></td> </tr> <tr> <td>• <math>8 = 8</math></td> <td>• <math>12 + 2 - 2 = 12</math></td> <td>• <math>3 + 4 + 5 = 7 + 5</math></td> </tr> <tr> <td>• <math>1 + 1 + 3 = 7</math></td> <td>• <math>9 + 3 = 10</math></td> <td>• <math>13 = 10 + 4</math></td> </tr> <tr> <td>• <math>4 + 3 = 3 + 4</math></td> <td>• <math>5 + 3 = 10 - 2</math></td> <td>• <math>10 + 9 + 1 = 19</math></td> </tr> <tr> <td></td> <td>• <math>3 + 4 + 5 = 3 + 5 + 4</math></td> <td></td> </tr> </table>	• $7 = 8 - 1$	• $6 - 1 = 1 - 6$	• $3 + 4 + 5 = 7 + 5$	• $8 = 8$	• $12 + 2 - 2 = 12$	• $3 + 4 + 5 = 7 + 5$	• $1 + 1 + 3 = 7$	• $9 + 3 = 10$	• $13 = 10 + 4$	• $4 + 3 = 3 + 4$	• $5 + 3 = 10 - 2$	• $10 + 9 + 1 = 19$		• $3 + 4 + 5 = 3 + 5 + 4$	
• $7 = 8 - 1$	• $6 - 1 = 1 - 6$	• $3 + 4 + 5 = 7 + 5$														
• $8 = 8$	• $12 + 2 - 2 = 12$	• $3 + 4 + 5 = 7 + 5$														
• $1 + 1 + 3 = 7$	• $9 + 3 = 10$	• $13 = 10 + 4$														
• $4 + 3 = 3 + 4$	• $5 + 3 = 10 - 2$	• $10 + 9 + 1 = 19$														
	• $3 + 4 + 5 = 3 + 5 + 4$															

**1.OA.D.8** Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations:  $8 + ? = 11$ ,  $5 = \square - 3$ ,  $6 + 6 = \square$ .*

**Component(s) of Rigor:** Conceptual Understanding

**Remediation - Previous Grade(s) Standard:** none

**1<sup>st</sup> Grade Standard Taught in Advance:** [1.OA.D.7](#)

**1<sup>st</sup> Grade Standard Taught Concurrently:** [1.OA.A.1](#)

Students need to understand the meaning of the equal sign and know that the value on one side of the equal sign must be the same value on the other side of the equal sign. They should be exposed to problems with the unknown in different positions. Having students create word problems for given equations will help them make sense of the equation and develop strategic thinking.

Examples of possible student “think-throughs”:

- $8 + ? = 11$ : “8 and some number is the same as 11. 8 and 2 is 10 and 1 more makes 11. So the answer is 3.”
- $5 = \square - 3$ : “This equation means I had some cookies and I ate 3 of them. Now I have 5. How many cookies did I have to start with? Since I know  $5 + 3 = 8$ , then I know that I started with 8 cookies if I ate 3 and had 5 left.”

Number and Operations in Base Ten (NBT)	
A. Extend the counting sequence.	
In this cluster, the terms students should learn to use with increasing precision are <i>numerals 0 through 120</i> .	
Louisiana Standard	Explanations and Examples
<p><b>1.NBT.A.1</b> Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding, Procedural Skill and Fluency  <b>Remediation - Previous Grade(s) Standard:</b> <a href="#">K.CC.A.1</a>  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <hr/> <p>Students use objects, words, and/or symbols to express their understanding of numbers. They extend their counting beyond 100 to count up to 120 by counting by 1s. Some students may begin to count in groups of 10 (while other students may use groups of 2s or 5s to count). Counting in groups of 10 as well as grouping objects into 10 groups of 10 will develop students' understanding of place value concepts. Students extend reading and writing numerals beyond 20 to 120.</p> <p>Students should experience counting from different starting points (e.g., start at 83; count to 120). To extend students' understanding of counting, they should be given opportunities to count backwards by ones and tens. They should also investigate patterns in the base-ten system.</p> <p>As first graders learn to understand that the position of each digit in a number impacts the value of the number, they become more aware of the order of the digits when they write numbers. For example, a student may write "17" and mean "71." Through teacher demonstration, opportunities to "find mistakes," and questioning by the teacher ("I am reading this and it says seventeen. Did you mean seventeen or seventy-one? How can you change the number so that it reads seventy-one?"), students become precise as they write numbers to 120.</p>

Number and Operations in Base Ten (NBT)

B. Understand place value.

In this cluster, the terms students should learn to use with increasing precision are **tens, ones, bundle, left-overs, singles, groups, greater/less than, equal to, compare, digit, number, and numeral.**

Louisiana Standard	Explanations and Examples
<p><b>1.NBT.B.2</b> Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p> <ol style="list-style-type: none"> <li>10 can be thought of as a bundle of ten ones — called a “ten.”</li> <li>The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</li> <li>The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).</li> </ol>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding (1, 2a, 2b, 2c)  <b>Remediation - Previous Grade(s) Standard:</b> <a href="#">K.NBT.A.1</a>  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> <a href="#">1.NBT.A.1</a>  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <p>First-grade students are introduced to the idea that a bundle of ten ones is called “a ten.” This is known as unitizing. When first-grade students unitize a group of ten ones as a whole unit (“a ten”), they are able to count groups as though they were individual objects. For example, 4 trains of ten cubes each have a value of 10 and would be counted as 40 rather than as 4. This is a monumental shift in thinking and can often be challenging for young children to consider a group of something as “one” when all previous experiences have been counting single objects. This is the foundation of the place value system and requires time and rich experiences with concrete manipulatives to develop.</p> <div data-bbox="976 771 1449 925" data-label="Diagram"> </div> <p>A student’s ability to conserve number is an important aspect of this standard. It is not obvious to young children that 42 cubes is the same amount as 4 tens and 2 leftovers. It is also not obvious that 42 could also be composed of 2 groups of 10 and 22 leftovers. Therefore, first graders require <b>numerous</b> experiences with grouping proportional (see Teacher Notes at end of section) objects (e.g., cubes, beans, beads, ten-frames, sticks, straws) to make groups of ten, prior to using pre-grouped materials (e.g., base-ten blocks, pre-made bean sticks) that have to be “traded” or are non-proportional (e.g., money). (See note in the section for part c of this standard.)</p> <p><b>Example:</b> 42 cubes can be grouped many different ways and still remain a total of 42 cubes.</p> <div data-bbox="504 1169 1470 1307" data-label="Image"> </div> <p><i>“We want children to construct the idea that all of these are the same and that the sameness is clearly evident by virtue of the groupings of ten. Groupings by tens is not just a rule that is followed but that any grouping by tens, including all or some of the singles, can help tell how</i></p>

**1.NBT.B.2** *continued*

*many.*" (Van de Walle & Lovin, p. 124)

First-grade students extend their work from kindergarten when they composed and decomposed numbers from 11 to 19 into ten ones and some further ones. In kindergarten, everything was thought of as individual units: "ones." In first grade, students are asked to unitize those ten individual ones as a whole unit: "one ten." Students in first grade explore the idea that the teen numbers (11 to 19) can be expressed as *one* ten and some leftover ones. Ample experiences with a variety of groupable materials that are proportional (e.g., cubes, links, beans, beads) and ten frames help students develop this concept.

**Example:** Here is a pile of 12 cubes. Do you have enough to make a ten? Would you have any left over? If so, how many leftovers would you have?

**Student A**

I filled a ten frame to make one ten and had two counters left over. I had enough to make a ten with some left over. The number 12 has 1 ten and 2 ones.

**Student B**

I counted out 12 cubes. I had enough to make 10. I now have 1 ten and 2.



In addition, when learning about forming groups of 10, first-grade students learn that a numeral can stand for many different amounts, depending on its position or place in a number. This is an important realization as young children begin to work through reversals of digits, particularly in the teen numbers.

**Example:** Are 19 and 91 the same or different numbers?

**Students:** Different!

**Teacher:** Why do you think so?

**Students:** Even though they both have a one and a nine, the top one is nineteen. The bottom one is ninety-one.

**Teacher:** Is that true some of the time, or all of the time? How do you know? (Teacher continues discussion.)

<p><b>1.NBT.B.2</b> <i>continued</i></p>	<p>First-grade students apply their understanding of groups of ten as stated in 1.NBT.B.2b to decade numbers (e.g. 10, 20, 30, 40). As they work with groupable objects, first-grade students understand that 10, 20, 30...80, 90 are comprised of a certain amount of groups of tens with none left over.</p> <p><b>Teacher Notes:</b>  <b>Proportional materials:</b> base-ten blocks (large cubes, flats, rods, small cubes) are an efficient and valuable model, as they are proportional in size. For example the rod is ten times as big as the small cube, and the flat is ten times as big as the rod and one hundred times as big as the small cube. The large cube is a thousand times bigger than the small cube, etc. This helps with developing number sense, as a number like 100 is ten times bigger than ten.  <b>Non-proportional materials:</b> Money is an example of non-proportional materials. The size of a coin does not reflect its value, e.g., a dime is smaller than a penny; however, a dime is worth ten times more.</p> <p><b>Base-Ten Materials:</b> Groupable and Pre-Grouped          Ample experiences with a variety of groupable materials that are proportional (e.g., cubes, links, beans, beads, sticks, straws) and ten frames allow students opportunities to create tens and break apart tens, rather than “trade” one for another. Since students’ first learning about place value concepts primarily relies on counting, the physical opportunity to build tens helps them to “see” that a “ten stick” has “ten items” within it. Pre-grouped materials (e.g., base ten blocks, bean sticks) are not introduced or used until a student has a firm understanding of composing and decomposing tens. (Van de Walle &amp; Lovin, 2006)</p>		
<p><b>1.NBT.B.3</b> Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, and <math>&lt;</math>.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding  <b>Remediation - Previous Grade(s) Standard:</b> <a href="#">K.CC.C.7</a>  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> <a href="#">1.NBT.B.2</a>  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <hr/> <p>Students use models that represent two sets of numbers. To compare, students first attend to the number of tens, then, if necessary, to the number of ones. Students may also use pictures and spoken or written words to compare two numbers. After numerous experiences verbally comparing two sets of objects using comparison vocabulary (e.g., 42 is more than 31. 23 is less than 52, 61 is the same amount as 61.), first-grade students connect the vocabulary to the symbols: greater than (<math>&gt;</math>), less than (<math>&lt;</math>), equal to (<math>=</math>).</p> <p><b>Example:</b> Compare these two numbers. 42 ___ 45</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> <p><b>Student A</b>                      42 has 4 tens and 2 ones. 45 has 4 tens and 5 ones. They have the same number of tens, but 45 has more ones than 42. So, 42 is less than 45.  <math>42 &lt; 45</math></p> </td> <td style="width: 50%; padding: 5px;"> <p><b>Student B</b>                      42 is less than 45. I know this because when I count up I say 42 before I say 45.  <math>42 &lt; 45</math>                      This says 42 is less than 45.</p> </td> </tr> </table>	<p><b>Student A</b>                      42 has 4 tens and 2 ones. 45 has 4 tens and 5 ones. They have the same number of tens, but 45 has more ones than 42. So, 42 is less than 45.  <math>42 &lt; 45</math></p>	<p><b>Student B</b>                      42 is less than 45. I know this because when I count up I say 42 before I say 45.  <math>42 &lt; 45</math>                      This says 42 is less than 45.</p>
<p><b>Student A</b>                      42 has 4 tens and 2 ones. 45 has 4 tens and 5 ones. They have the same number of tens, but 45 has more ones than 42. So, 42 is less than 45.  <math>42 &lt; 45</math></p>	<p><b>Student B</b>                      42 is less than 45. I know this because when I count up I say 42 before I say 45.  <math>42 &lt; 45</math>                      This says 42 is less than 45.</p>		

Number and Operations in Base Ten (NBT)

C. Use place value understanding and properties of operations to add and subtract.

In this cluster, the terms students should learn to use with increasing precision are **ones, tens, add, subtract, reason, more, and less.**

Louisiana Standard	Explanations and Examples
<p><b>1.NBT.C.4</b> Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10.</p> <p>a. Use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a number sentence; justify the reasoning used with a written explanation.</p> <p>b. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding (4a,4b), Procedural Skill and Fluency (4)</p> <p><b>Remediation - Previous Grade(s) Standard:</b> none</p> <p><b>1<sup>st</sup> Grade Standard Taught in Advance:</b> <a href="#">1.OA.C.6</a>, <a href="#">1.NBT.B.2</a></p> <p><b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <p>This standard does <b>not</b> limit the addition of two-digit numbers to a two-digit number and a multiple of 10 because the term “including” does not exclude adding two-digit numbers, such as <math>19 + 18</math>. In grade 2, students are required to add up to four two-digit numbers (2.NBT.B.6) using place value strategies and properties of operation. Thus, this standard serves as the foundation for the grade 2 standard. The only restriction is that the sum of the two numbers must be 100 or less. Intensive work with adding a two-digit number to a multiple of 10 and adding a two-digit number to a one-digit number will enhance students’ understanding of adding digits with the same place value.</p> <p>Students extend their number fact and place value strategies to add within 100. They represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. It is important for students to understand if they are adding a number that has 10s to a number with 10s, they will have more tens than they started with; the same applies to the ones. Also, students should be able to apply their place value skills to decompose numbers. For example, <math>17 + 12</math> can be thought of 1 ten and 7 ones plus 1 ten and 2 ones.</p> <p>Students should be exposed to problems both in and out of context and presented in horizontal and vertical forms. As students are solving problems, it is important that they use language associated with proper place value (see example). They should always explain and justify their mathematical thinking both verbally and in a written format. Estimating the solution prior to finding the answer focuses students on the meaning of the operation and helps them attend to the actual values. This standard focuses on developing addition—the intent is not to introduce traditional algorithms or rules.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <math>43 + 30</math> Student counts up by 10 from 43: 43, 53, 63, 73.</li> <li>• <math>28 + 34</math> Student thinks: 2 tens plus 3 tens is 5 tens or 50. S/he counts the ones and notices there is another 10 plus 2 more. 50 and 10 is 60 plus 2 more or 62.</li> <li>• <math>29 + 14</math> Student thinks: 29 is almost 30. I added one to 29 to get to 30. 30 and 14 is 44. Since I added one to 29, I have to subtract one so the answer is 43.</li> </ul> 

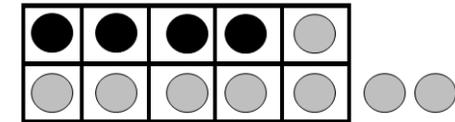
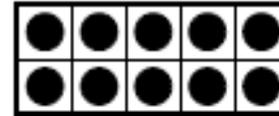
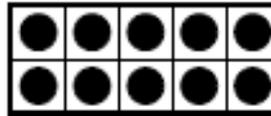
1.NBT.C.4 continued

**Example:** Explain how to add 24 and 8. Show your work.

**Student A:**

I used ten frames. I put 24 chips on 3 ten frames. Then, I counted out 8 more chips. 6 of them filled up the third ten frame. That meant I had 2 left over. 3 tens and 2 left over. That's 32. So,  $24 + 8 = 32$ .

$$\begin{array}{r} 24 + 6 = 30 \\ 30 + 2 = 32 \end{array}$$



**Student B:**

I turned 8 into 10 by adding 2 because it's easier to add. So, 24 and ten more is 34. But, since I added 2 extra, I had to take them off again. 34 minus 2 is 32.

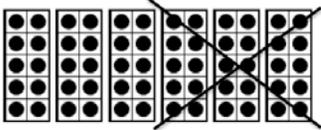
$$\begin{array}{r} 8 + 2 = 10 \\ 24 + 10 = 34 \\ 34 - 2 = 32 \end{array}$$

**Example:** Use the hundreds chart to add 63 and 20. Explain your strategy.

**Student Response:**

I started at 63 and jumped down one row to 73. That means I moved 10 spaces. Then, I jumped down one more row (that's another 10 spaces) and landed on 83. So,  $63 + 20 = 83$ .

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

<p><b>1.NBT.C.5</b> Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding  <b>Remediation - Previous Grade(s) Standard:</b> none  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <p>This standard requires students to understand and apply the concept of 10 which leads to future place value concepts. Extensive use of models such as base-ten blocks and 100s charts will help facilitate this understanding and will move students beyond simply rote counting by ten. It also helps students see the pattern involved when adding or subtracting 10. However, it is critical for students to mentally find 10 more or 10 less than the number by the end of the year.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• 10 more than 43 is 53 because 53 is one more 10 than 43</li> <li>• 10 less than 43 is 33 because 33 is one 10 less than 43</li> </ul> <p>Students may use interactive versions of models (base-ten blocks, 100s charts, number lines, etc.) to develop understanding.</p>
<p><b>1.NBT.C.6</b> Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding  <b>Remediation - Previous Grade(s) Standard:</b> none  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> <a href="#">1.NBT.B.2</a>  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> <a href="#">1.NBT.C.5</a></p> <p>This standard is foundational for future work in subtraction with more complex numbers. Students should have multiple experiences representing numbers that are multiples of 10 (e.g. 90) with models or drawings. Then they subtract multiples of 10 (e.g. 20) using these representations or strategies based on place value. These opportunities develop fluency with addition and subtraction and reinforce counting up and back by 10s.</p> <p><b>Example:</b> Explain how to find 60 - 30.</p> <p><b>Sample response</b>  I used ten frames. I had 6 ten frames—that's 60. I removed three ten frames because 30 students left the gym. There are 30 students left in the gym.</p>  <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-left: 200px;"> <math>60 - 30 = 30</math> </div> <p><b>Examples with explanations and no models:</b></p> <ul style="list-style-type: none"> <li>• 70 - 30: Seven 10s take away three 10s is four 10s or 40.</li> <li>• 80 - 50: 80, 70 (subtract one 10), 60 (subtract two 10s), 50 ( subtract three 10s), 40 ( subtract four 10s), 30 (subtract five 10s), so 80 - 50 = 30</li> </ul>

Measurement and Data (MD)	
A. Measure lengths indirectly and by iterating length units.	
In this cluster, the terms students should learn to use with increasing precision are <b>measure, order, length, width, height, more, less, longer than, shorter than, first, second, third, gap, overlap, about, a little less than, a little more than, taller, and higher.</b>	
Louisiana Standard	Explanations and Examples
<p><b>1.MD.A.1</b> Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding, Procedural Skill and Fluency  <b>Remediation - Previous Grade(s) Standard:</b> none  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> <a href="#">K.MD.A.2</a>  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <hr/> <p>In order for students to be able to compare objects, students need to understand that length is measured from one end point to another end point. They determine which of two objects is longer by physically aligning the objects. Typical language of length includes taller, shorter, longer, and higher. When students use bigger or smaller as a comparison, they should explain what they mean by the word. Some objects may have more than one measurement of length, so students identify the length they are measuring. Both the length and the width of an object are measurements of length.</p> <p><b>Examples for ordering:</b></p> <ul style="list-style-type: none"> <li>• Order three students by their height</li> <li>• Order pencils, crayons, and/or markers by length</li> <li>• Build three towers (with cubes) and order them from shortest to tallest</li> <li>• Three students each draw one line, then order the lines from longest to shortest</li> </ul> <p><b>Example for comparing indirectly:</b></p> <ul style="list-style-type: none"> <li>• Two students each make a dough “snake.” Given a tower of cubes, each student compares his/her snake to the tower. Then students make statements such as “My snake is longer than the cube tower and your snake is shorter than the cube tower. So, my snake is longer than your snake.”</li> </ul>

**1.MD.A.2** Express the length of an object as a whole number of length units by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

**Component(s) of Rigor:** Conceptual Understanding, Procedural Skill and Fluency

**Remediation - Previous Grade(s) Standard:** none

**1<sup>st</sup> Grade Standard Taught in Advance:** **1.MD.A.1**

**1<sup>st</sup> Grade Standard Taught Concurrently:** none

First-graders use objects to measure items to help students focus on the attribute being measured. Measuring objects in this way also lends itself to future discussions regarding the need for a standard unit.

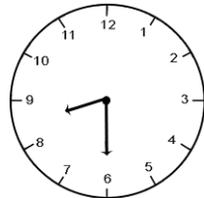
First-grade students use multiple copies of one object (tiles, unifix cubes, paper clips, etc) to measure the length of a larger object. They learn to lay physical units such as centimeter or inch manipulatives end-to-end and count them to measure a length. Through numerous experiences and careful questioning by the teacher, students will recognize the importance of careful measuring so that there are not any gaps or overlaps in order to get an accurate measurement. This concept is a foundational building block for the concept of area in third grade.

Note: While objects used to measure a length may include centimeter or inch manipulatives, students are not introduced to those terms or to a ruler in first grade. The focus should be on giving lengths in terms of the number of object used (e.g., tiles, cubes, etc.). Students should not be required to measure in centimeters or inches.

**Example:** How many paper clips long is the pencil?



**Student Response:** The pencil is about 6 paper clips long.

Measurement and Data (MD)	
B. Tell and write time.	
In this cluster, the terms students should learn to use with increasing precision are <b>time, hour, half-hour, about, o'clock, past, "six"-thirty, analog clock, and digital clock.</b>	
Louisiana Standard	Explanations and Examples
<p><b>1.MD.B.3</b> Tell and write time in hours and half-hours using analog and digital clocks.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding, Procedural Skill and Fluency  <b>Remediation - Previous Grade(s) Standard:</b> none  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <p>Ideas to support telling time:</p> <ul style="list-style-type: none"> <li>• within a day, the hour hand goes around a clock twice (the hand moves only in one direction)</li> <li>• when the hour hand points exactly to a number, the time is exactly on the hour</li> <li>• time on the hour is written in the same manner as it appears on a digital clock</li> <li>• the hour hand moves as time passes, so when it is half way between two numbers it is at the half hour</li> <li>• there are 60 minutes in one hour; so halfway between an hour, 30 minutes have passed</li> <li>• half hour is written with "30" after the colon</li> </ul> <p style="text-align: center;">"It is 4 o'clock"</p>  <p style="text-align: center;">"It is halfway between 8 o'clock and 9 o'clock. It is eight-thirty."</p>  <p>The idea of 30 being "halfway" is difficult for students to grasp. To help students understand this concept, have students write the numbers from 0 through 60, counting by tens, on a sentence strip. Fold the paper in half and determine that halfway between 0 and 60 is 30.</p>

Measurement and Data (MD)									
C. Represent and interpret data.									
In this cluster, the terms students should learn to use with increasing precision are <b>data, more, most, less, least, same, different, category, question, collect,</b>									
Louisiana Standard	Explanations and Examples								
<p><b>1.MD.C.4</b> Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding, Procedural Skill and Fluency, Application</p> <p><b>Remediation - Previous Grade(s) Standard:</b> <a href="#">K.MD.B.3</a></p> <p><b>1<sup>st</sup> Grade Standard Taught in Advance:</b> <a href="#">1.OA.A.1</a>, <a href="#">1.OA.A.2</a></p> <p><b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <p>First-grade students collect and use categorical data (e.g., eye color, shoe size, age) to answer a question. The data collected are often organized in a chart or table. Once the data are collected, first graders interpret the data to determine the answer to the question posed. They also describe the data noting particular aspects such as the total number of answers, which category had the most/least responses, and interesting differences/similarities between the categories. As the teacher provides numerous opportunities for students to create questions, determine up to 3 categories of possible responses, collect data, organize data, and interpret the results, first graders build a solid foundation for future data representations (picture and bar graphs) in second grade.</p> <p><b>Example: Survey Station</b></p> <p>During Literacy Block, a group of students work at the Survey Station. Each student writes a question, creates up to 3 possible answers, and walks around the room collecting data from classmates. Each student then interprets the data and writes 2 to 4 sentences describing the results. When all of the students in the Survey Station have completed their own data collection, they each share with one another what they discovered. They ask clarifying questions of one another regarding the data, and make revisions as needed. They later share their results with the whole class.</p> <p><b>Student:</b> The question “What is your favorite flavor of ice cream?” is posed and recorded. The categories chocolate, vanilla, and strawberry are determined as anticipated responses and written down on the recording sheet. When asking each classmate about their favorite flavor, the student’s name is written in the appropriate category. Once the data are collected, the student counts up the amounts for each category and records the amount. The student then analyzes the data by carefully looking at the data and writes 4 sentences about the data.</p> <div style="text-align: right;"> <p>Name <u>Barbara</u></p> <table border="1"> <thead> <tr> <th colspan="2">What is your favorite flavor of ice cream?</th> </tr> </thead> <tbody> <tr> <td>Chocolate</td> <td>Amy Ethan Dylan Emma Ryan Elijah Ava Emily Aiden Brittany THOMAS Nathan 12</td> </tr> <tr> <td>Vanilla</td> <td>sarah Maria Brian Katie KITTY 5</td> </tr> <tr> <td>Strawberry</td> <td>Rodney Brandon Darrell Mia Tonya Jose 6</td> </tr> </tbody> </table> <p><u>12</u> people liked chocolate. Chocolate has the most votes. Vanilla has 5 votes. 1 more vote and it can tie with strawberry.</p> </div>	What is your favorite flavor of ice cream?		Chocolate	Amy Ethan Dylan Emma Ryan Elijah Ava Emily Aiden Brittany THOMAS Nathan 12	Vanilla	sarah Maria Brian Katie KITTY 5	Strawberry	Rodney Brandon Darrell Mia Tonya Jose 6
What is your favorite flavor of ice cream?									
Chocolate	Amy Ethan Dylan Emma Ryan Elijah Ava Emily Aiden Brittany THOMAS Nathan 12								
Vanilla	sarah Maria Brian Katie KITTY 5								
Strawberry	Rodney Brandon Darrell Mia Tonya Jose 6								

Measurement and Data (MD)	
D. Work with money.	
In this cluster, the terms students should learn to use with increasing precision are penny, nickel, dime, quarter, value, and cents.	
Louisiana Standard	Explanations and Examples
<p><b>1.MD.D.5</b> Determine the value of a collection of coins up to 50 cents. (Pennies, nickels, dimes, and quarters in isolation; not to include a combination of different coins.)</p>	<p><b>Component(s) of Rigor:</b> Procedural Skill and Fluency  <b>Remediation - Previous Grade(s) Standard:</b> <a href="#">K.MD.C.4</a>  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <hr/> <p>First-grade students extend their knowledge of coin names and values to determine the value of a set of pennies, nickels, dimes or quarters whose total value is no greater than 50 cents. For pennies, nickels, and dimes, students can skip-count to determine the total value. Since the limit is 50 cents, the number of quarters is limited to two. <b>It is important to recognize that first grade students do not have an understanding of decimal place values; therefore, requiring students to use decimals is prohibited.</b></p> <p><b>Example:</b> Provide students with a set containing 7 nickels. Students can skip-count by 5s to find that the value is 35 cents.</p>

Geometry (G)	
A. Reason with shapes and their attributes.	
<p>In this cluster, the terms students should learn to use with increasing precision are <b>shape, closed, open, side, attribute<sup>1</sup>, feature<sup>1</sup>, two-dimensional, rectangle, square, rhombus, trapezoid, triangle, half-circle, and quarter-circle, three-dimensional, cube, cone, prism, cylinder, partition, equal shares, halves, fourths, quarters, half of, fourth of, and quarter of.</b><sup>1</sup> “Attributes” and “features” are used interchangeably to indicate any characteristic of a shape, including properties, and other defining characteristics (e.g., straight sides) and non-defining characteristics (e.g., “right-side up”).</p>	
Louisiana Standard	Explanations and Examples
<p><b>1.G.A.1</b> Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding  <b>Remediation - Previous Grade(s) Standard:</b> <a href="#">K.G.A.2</a>, <a href="#">K.G.A.3</a>, <a href="#">K.G.B.4</a>  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <p>First-grade students use their beginning knowledge of defining and non-defining attributes of two-dimensional shapes to identify, name, build and draw shapes (including triangles, squares, rectangles, and trapezoids). They understand that defining attributes are always-present features that classify a particular object (e.g., number of sides, angles, etc.). They also understand that non-defining attributes are features that may be present, but do not identify what the shape is called (e.g., color, size, orientation, etc.).</p> <p><b>Example:</b>            All triangles must be closed figures and have 3 sides. These are defining attributes.            Triangles can be different colors, sizes and be turned in different directions. These are non-defining attributes.</p> <p><b>Student</b>            I know that this shape is a triangle because it has 3 sides.            It's also closed, not open.</p> <p><b>Student</b>            I used toothpicks to build a square. I know it's a square because it has 4 sides. And, all 4 sides are the same size.</p> 
<p><b>1.G.A.2</b> Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) and three-dimensional shapes (cubes, right rectangular prisms*, right</p>	<p><b>Component(s) of Rigor:</b> Conceptual Understanding  <b>Remediation - Previous Grade(s) Standard:</b> <a href="#">K.G.B.6</a>  <b>1<sup>st</sup> Grade Standard Taught in Advance:</b> none  <b>1<sup>st</sup> Grade Standard Taught Concurrently:</b> none</p> <p>As first graders create composite (a figure made up of two or more geometric shapes) two- and three-dimensional shapes, they begin to see how shapes fit together to create different shapes. They also begin to notice shapes within an already existing shape. They may use such tools as pattern blocks, tangrams, attribute blocks, or virtual shapes to compose different shapes.</p>

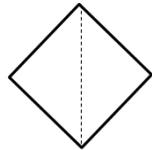
**1.G.A.2** *continued*  
circular cones\*, and right circular cylinders\*) to create a composite shape, and compose new shapes from the composite shape.

\*Students do not need to learn formal names such as "right rectangular prism."

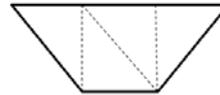
First-grade students are not required to know formal names for right rectangular prism, right circular cone, and right circular cylinders. They should recognize a tissue box or a cube as a prism, a soup can as a cylinder, and an ice cream cone (pointed end) as a cone.

**Example:** What shapes can you create with triangles?

**Student A:** I made a square. I used 2 triangles.



**Student B:** I made a trapezoid. I used 4 triangles.



**Student C:** I made a tall skinny rectangle. I used 6 triangles.



First graders learn to perceive a combination of shapes as a single new shape (e.g., recognizing that two (isosceles) triangles can be combined to make a rhombus, and simultaneously seeing the rhombus and the two triangles). Note: The term isosceles is not required in grade 1; however, isosceles triangles are found in pattern blocks and students will likely use two such triangles to form a rhombus.

Thus, they develop competencies that include:

1. Solving shape puzzles
2. Constructing designs with shapes
3. Creating and maintaining a shape as a unit

As students combine shapes, they continue to develop their sophistication in describing geometric attributes and properties and determining how shapes are alike and different, building foundations for measurement and initial understandings of properties such as congruence and symmetry.

Students can make three-dimensional shapes with clay or dough, slice into two pieces (not necessarily congruent) and describe the two resulting shapes. For example, slicing a cylinder will result in two smaller cylinders.

**1.G.A.3** Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares

**Component(s) of Rigor:** Conceptual Understanding, Procedural Skill and Fluency

**Remediation - Previous Grade(s) Standard:** none

**1<sup>st</sup> Grade Standard Taught in Advance:** [1.G.A.2](#)

**1<sup>st</sup> Grade Standard Taught Concurrently:** none

Students need experiences with different sized circles and rectangles to recognize that when they cut something into two equal pieces, each piece will equal one-half of its original whole. Students should recognize that there are different ways to find halves of the same figure. Also they should reason that decomposing equal shares into more equal shares results in smaller equal shares.

**Examples:**

- Student partitions a rectangular candy bar to share equally with one friend and thinks “I cut the rectangle into two equal parts. When I put the two parts back together, they equal the whole candy bar. One-half of the candy bar is smaller than the whole candy bar.”



- How can you and a friend share equally (partition) this piece of paper so that you both have the same amount of paper to paint a picture?



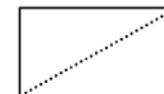
**Student 1**

- I would match the short sides of the paper and fold down the middle. That gives us 2 halves. I have half of the paper and my friend has the other half of the paper.



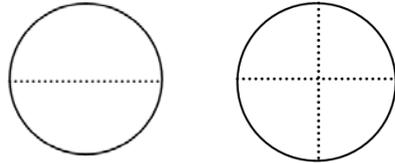
**Student 2**

- I would split it from corner to corner (diagonally). She gets half of the paper and I get half of the paper. See, if we cut on the line, the parts are the same size.



**1.G.A.3** *continued*

- You can have only one slice of pizza. Which pizza should you pick your slice from if you want the biggest piece of pizza? The pizzas are the same size and are each divided into equal pieces. Explain how you know.



I would get more pizza if I took a slice from the pizza that is divided into 2 equal parts. The more equal slices there are, the smaller the pieces get. I would not get as much pizza if I only got a fourth of the pizza instead of half of the pizza.

Table1. Common addition and subtraction situations.<sup>1</sup>

	Result Unknown	Change Unknown	Start Unknown
<b>Add to</b>	Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now? $2 + 3 = ?$	Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two? $2 + ? = 5$	Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before? $? + 3 = 5$
<b>Take from</b>	Five apples were on the table. I ate two apples. How many apples are on the table now? $5 - 2 = ?$	Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? $5 - ? = 3$	Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before? $? - 2 = 3$
	Total Unknown	Addend Unknown	Both Addends Unknown <sup>3</sup>
<b>Put Together / Take Apart<sup>2</sup></b>	Three red apples and two green apples are on the table. How many apples are on the table? $3 + 2 = ?$	Five apples are on the table. Three are red and the rest are green. How many apples are green? $3 + ? = 5, 5 - 3 = ?$	Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? $5 = 0 + 5, 5 = 5 + 0$ $5 = 1 + 4, 5 = 4 + 1$ $5 = 2 + 3, 5 = 3 + 2$
	Difference Unknown	Bigger Unknown	Smaller Unknown
<b>Compare<sup>4</sup></b>	("How many more?" version): Lucy has two apples. Julie has five apples. How many more apples does Julie have than Lucy?  ("How many fewer?" version): Lucy has two apples. Julie has five apples. How many fewer apples does Lucy have than Julie? $2 + ? = 5, 5 - 2 = ?$	(Version with "more"): Julie has three more apples than Lucy. Lucy has two apples. How many apples does Julie have?  (Version with "fewer"): Lucy has 3 fewer apples than Julie. Lucy has two apples. How many apples does Julie have? $2 + 3 = ?, 3 + 2 = ?$	(Version with "more"): Julie has three more apples than Lucy. Julie has five apples. How many apples does Lucy have?  (Version with "fewer"): Lucy has 3 fewer apples than Julie. Julie has five apples. How many apples does Lucy have? $5 - 3 = ?, ? + 3 = 5$

<sup>1</sup>Adapted from Box 2-4 of Mathematics Learning in Early Childhood, National Research Council (2009, pp. 32, 33).

<sup>2</sup>These take apart situations can be used to show all the decompositions of a given number. The associated equations, which have the total on the left of the equal sign, help children understand that the = sign does not always mean makes or results in but always does mean is the same number as.

<sup>3</sup>Either addend can be unknown, so there are three variations of these problem situations. Both Addends Unknown is a productive extension of this basic situation, especially for small numbers less than or equal to 10.

<sup>4</sup>For the Bigger Unknown or Smaller Unknown situations, one version directs the correct operation (the version using more for the bigger unknown and using less for the smaller unknown). The other versions are more difficult.

## Kindergarten Standards

■ **K.CC.A.1** Count to 100 by ones and by tens. *Return to* ■ [1.NBT.A.1](#)

■ **K.CC.C.7** Compare two numbers between 1 and 10 presented as written numerals. *Return to* ■ [1.NBT.3](#)

■ **K.OA.A.2** Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

*Return to* ■ [1.OA.A.1](#), ■ [1.OA.C.6](#)

■ **K.OA.A.3** Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ). *Return to* ■ [1.OA.C.6](#)

■ **K.OA.A.4** For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. *Return to* ■ [1.OA.C.6](#)

■ **K.OA.A.5** Fluently add and subtract within 5. *Return to* ■ [1.OA.C.6](#)

■ **K.NBT.A.1** Gain understanding of place value.

- Understand that the numbers 11–19 are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
- Compose and decompose numbers 11 to 19 using place value (e.g., by using objects or drawings).
- Record each composition or decomposition using a drawing or equation (e.g., 18 is one ten and eight ones,  $18 = 1 \text{ ten} + 8 \text{ ones}$ ,  $18 = 10 + 8$ ).

*Return to* ■ [1.NBT.B.2](#)

■ **K.MD.A.2** Directly compare two objects with a measurable attribute in common, to see which object has “more of”/ “less of” the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.* *Return to* ■ [1.MD.A.1](#)

■ **K.MD.B.3** Classify objects into given categories based on their attributes; count the numbers of objects in each category and sort the categories by count.

*Return to* ■ [1.MD.C.4](#)

■ **K.MD.C.4** Recognize pennies, nickels, dimes, and quarters by name and value (e.g., This is a nickel and it is worth 5 cents.) *Return to* ■ [1.MD.D.5](#)

■ **K.G.A.2** Correctly name shapes regardless of their orientations or overall size. *Return to* ■ [1.G.A.1](#)

■ **K.G.A.3** Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”). *Return to* ■ [1.G.A.1](#)

■ **K.G.B.4** Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length). *Return to* ■ [1.G.A.1](#)

■ **K.G.B.6** Compose simple shapes to form larger shapes. *For example, “Can you join these two triangles with full sides touching to make a rectangle?”*

*Return to* ■ [1.G.A.2](#)